

## REMARKS

The Office Action mailed September 28, 2006, has been reviewed and carefully considered. Claims 18-19, 21-23, 34-35, 37-39 and 50 have been amended and claims 1-17, 24-33 and 40-49 have been withdrawn. Claims 1-50 are pending in the application.

On page 2 of the Office Action, claims 28-33 and 42-49 were withdrawn as not reading on the species of Fig. 8, there being no allowable generic or linking claim.

Applicant respectfully traverses the withdraw of claims 28-33 and 42-49. Applicant respectfully submits that claims 18 and 34 are generic, and in view of the amendments and remarks herein are allowable.

On page 3 of the Office Action, the drawings were objected to.

Applicant respectfully traverses the objection to the drawings, but in the interest of expediting prosecution has amended Fig. 1 as suggested.

On page 4 of the Office Action, the title, specification and claims were objected to because of informalities.

Applicants respectfully traverse the objections, but in the interest of expediting prosecution have amended the title, specification and claims to overcome the objections as suggested. Applicant submits that the amendment to the claims do not narrow or change the scope of the invention.

In paragraph 8 and page 5 of the Office Action, claims 18-23 and 34-39 were rejected under 35 U.S.C. §112, first paragraph, as being indefinite.

Applicants respectfully traverse the rejection, but in the interest of expediting prosecution have amended the claims to overcome the rejections as suggested. Applicant submits that the amendment to the claims do not narrow or change the scope of the invention.

In paragraph 10 on page 6 of the Office Action, claims 18, 34 and 50 were rejected under 35 U.S.C. § 102(b) as being anticipated by Beach et al.

In paragraph 12 on page 8 of the Office Action, claims 19-23 and 35-39 were indicated as being allowable if rewritten to overcome the rejections under 35 U.S.C. 112, second paragraph and to include all of the limitations of the base claim and any intervening claims.

Applicant respectfully traverses the rejections. Applicant respectfully submits that the claims, as amended, are patentable over Beach et al.

Beach et al. discloses a dual spin valve sensor. Each of the spin valve sensors includes an AFM pinned layer and a spacer. An antiparallel-coupled free structure is disposed between the spacers.

In contrast, the claims, as amended, recite a first self-pinned GMR sensor, a second self-pinned GMR sensor. The dual spin valve sensor of Beach et al. provides AFM pinned layers rather than self-pinned layers.

Furthermore, the claims, as amended, recite that the first self-pinned GMR sensor includes a first pinned layer, a first spacer layer and a first free layer and that the second self-pinned GMR sensor includes a second pinned layer, a second spacer layer and a second free layer. Moreover, a bias structure configured to provide antiparallel magnetizations for the first and second free layers without using an antiferromagnetic layer is disposed between the first free layer of the first self-pinned GMR sensor and the second free layer of the second self-pinned GMR sensor.

Beach et al. do not disclose a bias structure configured to provide antiparallel magnetizations for the first and second free layers without using an antiferromagnetic layer. Rather, Beach et al. disclose merely antiparallel coupling the two free layers. Thus, the alleged

bias layer of Beach et al. is not in fact a bias layer, but rather a non-magnetic spacer material that allows the free layers to oscillate between ferromagnetic and antiferromagnetic as a function of the distance between the free layers.

Accordingly, Applicant respectfully submits that claims 18, 34 and 50 are patentable over Beach et al.

Dependent claims 19--23 and 35-39 are also patentable over the cited reference, because they incorporate all of the limitations of the corresponding independent claim 18 and 34. Further dependent claims 19--23 and 35-39 recite additional novel elements and limitations. Applicants reserve the right to argue independently the patentability of these additional novel aspects. Therefore, Applicants respectfully submit that dependent claims 19--23 and 35-39 are patentable over the cited references, and request that the objections to the independent claims be withdrawn.

On the basis of the above amendments and remarks, it is respectfully submitted that the claims are in immediate condition for allowance. Accordingly, reconsideration of this application and its allowance are requested.

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Attorney for Applicant, David W. Lynch, at 423-757-0264.

Respectfully submitted,

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